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EXAMINER	
MOE, AUNG SOE	
ART UNIT	**PAPER NUMBER**
2612	8

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/592,944	KAHN, RICHARD OLIVER	
	Examiner	Art Unit	
	Aung S. Moe	2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-15 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) 1,2 and 4-15 is/are rejected.

7)☒ Claim(s) 3 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 2.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

(a) TITLE OF THE INVENTION.
(b) CROSS-REFERENCE TO RELATED APPLICATIONS.
(c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
(d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
(e) BACKGROUND OF THE INVENTION.
(1) Field of the Invention.
(2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
(f) BRIEF SUMMARY OF THE INVENTION.
(g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
(h) DETAILED DESCRIPTION OF THE INVENTION.
(i) CLAIM OR CLAIMS (commencing on a separate sheet).
(j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
(k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

1. The disclosure is objected to because of the following informalities: It is noted that the Specification of the instant application should includes the section heading: such as "BACKGROUND OF THE INVENTION", "BRIEF SUMMARY OF THE INVENTION", "BRIEF DESCRIPTION OF THE DRAWING(S)", and "DETAILED DESCRIPTION OF THE INVENTION" as discussed above.

Appropriate correction is required.

Claim Objections

2. Claims 1-15 are objected to because of the following informalities:

In claims 1, 7, 11, 13 and 14, the word "synchronise" should be changed to -- synchronize --.

In claims 5 and 6 (line 2), please delete the word "is" after "pulsed".

In claim 14, it is unclear how "a portion of a document" recited in line 21 relate to "a portion of a document" recited in line 16? If there are the same "portion of the document", the Examiner suggests changing "a portion of a document" in line 21 to - - **said** portion of **the** document --. Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 2, 4, 7-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Ishii (U.S. 5,539,456).

Regarding claim 1, Ishii '456 discloses a camera (Figs. 1-2) comprising: a detector (12) for image capture, an objective lens (2) with a field of view to image optical radiation from an object plane (i.e., noted that the object captured by the camera has to be in an object plane) onto the detector (i.e., the CCD 12) for image capture, a strobe flash (i.e., the element 9) for illuminating the object plane, electronic pulse circuitry (i.e., noted the Strobe drive circuit and the controller as shown in Figs. 2 and 27) to pulse the strobe flash (9) at a rate which is sufficiently quick (i.e., noted the rate of the strobe light emission pulses as shown in Figs. 10, 14, 17, 20, 25 and 29) that the illumination appears to a user of the camera to be substantially steady owing to persistence of vision (i.e., see Fig. 9 and col. 2, lines 10-15 and col. 10, lines 30+), and a shutter to synchronize the capture of one or more images by the detector for image capture (i.e., Fig. 2, the element 34), each image being captured with at least one pulse from the strobe flash (Fig. 10, col. 10, lines 30+), wherein the shutter is adapted to capture images at a rate substantially below the rate at which the strobe flash is pulse (i.e., noted form Fig. 10 that the rate at which the strobe flash is faster than the shutter speed as shown in "A" and "B", thus, it is cleared that the rate of the shutter is substantially lower than the rate of strobe flash is pulsed; col. 10, lines 5+).

Regarding claim 2, Ishii '456 discloses in which the pulse circuitry is arranged to ramp up the perceived intensity of the steady illumination prior to the captured of the image, **and/or** to ramp down said intensity after captured of the image (i.e., see Figs. 9, 10 and 14; col. 9, lines 45+).

Regarding claim 4, Ishii '456 discloses in which the ramp up and/or ramp down of the perceived intensity of the steady illumination takes place over less than 1 second (i.e., as shown in Figs. 9, 10 and 14 that the intensity of the strobe light emission is charged for less than 1 second, e.g., noted the charged period for the strobe light emission, so that the image picked-up signals level effected by the light emission of a strobe 9 remains constant; see col. 10, lines 35+).

Regarding claim 7, Ishii '456 discloses in which the detector for image capture is an electronic detector array (i.e., noted that the CCD sensor as shown in Fig. 4), the shutter (Fig. 2, the elements 34/32) comprising electronic control circuitry (i.e., the circuits 14, 16 and 27 as shown in Fig. 2)to synchronize the capture of an image by the detector array with the strobe flash (i.e., noted the synchronization of the strobe flash and the image captured signal as shown in Fig. 10).

Regarding claim 8, Ishii '456 discloses in which the camera includes an actuator (i.e., as shown in Figs. 2 and 3 that the camera contain an actuator 42/41 for scanning the field of view in the object plane to capture the images of different fields of view) to scan the field of view of the objective lens (2/411) in the object plane as the control circuitry (27) captures images of different field of view (i.e., noted that the camera is capable of capturing the images of different fields of view by changing the zoom control in the respective TELE and WIDE directions; see col. 6, lines 30+).

Regarding claim 9, Ishii '456 discloses in which the actuator scans the field of view of the objective lens (2/411) continuously as the control circuitry captures images of different fields of view (i.e., noted that the actuator 42/41 is capable of scanning the field of view of the objective lens 2 by continuously moving the lens 411 in the respective TELE and WIDE

directions, so that the images of different fields of view are captured by the objective lens of the camera; see col. 6, lines 35+).

Regarding claim 10, Ishii '456 discloses in which the camera is a hand-held camera (i.e., noted the camera as shown in Fig. 1).

5. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Shinoda et al. (U.S. 4,567,506).

Regarding claim 1, Shinoda '506 discloses a camera (Fig. 1 and 2, the element 3) comprising: a detector for image capture (i.e., noted that the camera unit 3 contains the detector for capturing the images as shown in Fig. 3), an objective lens (Fig. 2, the element 12a) with a field of view to image optical radiation from an object plane (Fig. 2, the element 5) onto the detector for image capture (i.e., col. 2, lines 45+), a strobe flash (11) for illuminating the object plane (5), electronic pulse circuitry (Fig. 2, the element 1) to pulse the strobe flash (11) at a rate which is sufficiently quick that the illumination appears to a user of the camera to be substantially steady owing to persistence of vision (Fig. 3, col. 2, lines 60+), and a shutter to synchronize the capture of one or more images by the detector for image capture (i.e., noted form Fig. 3 of Shinoda '506 that the video image signals is synchronized with the flash pulse, thus, the camera system must include a shutter device to captured the images by the camera), each image being captured with at least one pulse from the strobe flash (i.e., noted the strobe pulse as shown in Fig. 3), wherein the shutter is adapted to capture images at a rate substantially below the rate at which the strobe flash is pulse (i.e., noted that the rate of strobe pulse is 30 micro-sec, thus, the

rate of the shutter speed of the camera is substantially below the rate of the strobe pulse; see col. 1, lines 55+, col. 2, lines 65+ and col. 3, lines 15+).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishii '456 in view of Sakamoto (U.S. 5,881,326).

Regarding claims 5 and 6, Ishii '456 does not explicitly show in which the rate at which the strobe flash is pulsed at least 50Hz and at least 10 times higher than the image capture rate.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Sakamoto '326. In particular, Sakamoto '326 teaches the use of a strobe flash unit in the camera system (Figs. 1 and 2), in which the rate at which the strobe flash is pulsed at least 50Hz (col. 9, lines 55+) and at least 10 times higher than the image capture rate (i.e., noted that the stroboscopic illumination is in a period of 1 millisecond and the shutter rate is 10 milliseconds as discussed in col. 12, lines 45+ and col. 14, lines 32+).

In view of the above, having the system of Ishii '456 and then given the well-established teaching of Sakamoto '326, it would have been obvious to one having ordinary skill in the art at

the time the invention was made to modify the system of Ishii '456 as taught by Sakamoto '326, since Sakamoto '326 suggest in col. 4, lines 5+ that such a modification would reduce an error in the exposure amount in each exposure operation thereof.

8. Claims 1, 7-9, 11 and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ariga et al. (U.S. 6,115,068) in view of Shinoda '506 (U.S. 4,567,506).

Regarding claim 1, Ariga '068 discloses a camera (Fig. 1, the element 2) comprising: a detector for image capture (i.e., the CCD sensor of the camera 2), an objective lens (1) with a field of view to image optical radiation from an object plane (36) onto the detector for image capture, and a shutter to synchronize the capture of one or more images by the detector for image capture (i.e., noted that the shutter switch 44 as shown in Fig. 3 is used to synchronize the images captured by the CCD sensor 203 of the camera 2).

Furthermore, it is noted that Ariga '068 does not explicitly show a strobe flash for illuminating the object plane, electronic pulse circuitry to pulse the strobe flash at a rate which is sufficiently quick that the illumination appears to a user of the camera to be substantially steady owing to persistence of vision, each image being captured with at least one pulse from the strobe flash, wherein the shutter is adapted to capture images at a rate substantially below the rate at which the strobe flash is pulse.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Shinoda '506. In particular, Shinoda '506 shows the use of a strobe flash (11) for illuminating the object plane (5), electronic pulse circuitry, such as the shutter and other control circuitry of the unit 1 as shown in Fig. 2 (i.e., noted that the camera 12 and the electronic control

circuitry 1 as shown in Fig. 3 must include the shutter to captured the images), to pulse the strobe flash (11) at a rate which is sufficiently quick that the illumination appears to a user of the camera to be substantially steady owing to persistence of vision (Fig. 3, col. 1, lines 55+ and col. 2, lines 60+), each image being captured with at least one pulse from the strobe flash (i.e., noted the strobe pulse as shown in Fig. 3), wherein the shutter is adapted to capture images at a rate substantially below the rate at which the strobe flash is pulse (i.e., noted that the rate of strobe pulse is 30 micro-sec, thus, the rate of the shutter speed of the camera is substantially below the rate of the strobe pulse; see col. 1, lines 55+, col. 2, lines 65+ and col. 3, lines 15+).

In view of the above, having the system of Ariga '068 and then given the well-established teaching of Shinoda '506, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Ariga '068 as taught by Shinoda '506, since Shinoda '506 suggest in col. 1, lines 50+ and col. 4, lines 10+ that such a modification would improve the quality of image by providing the stationary image of the fast moving object so that monitoring may be accomplished easily.

Regarding claim 7, the combination of Ariga '068 and Shinoda '506 discloses in which the detector for image capture is an electronic detector array (i.e., noted that the camera 2 of Ariga '068 contains the CCD sensor 203 as shown in Fig. 3), the shutter (i.e., noted the shutter 44 as shown in Fig. 3 of Ariga '068; also noted that the camera system of Shinoda '506 must include the shutter to captured the image by the camera 12) comprising electronic control circuitry (Fig. 3 of Ariga '068; and Fig. 2, the element 1 of Shinoda '506) to synchronize the capture of an image by the detector array with the strobe flash (i.e., see Fig. 3 of Shinoda '506).

Regarding claim 8, the combination of Ariga '068 and Shinoda '506 discloses in which the camera includes an actuator (Fig. 1 of Ariga '068; the elements 5, 6, 11, 12, 14 and 15) to scan the field of view of the objective lens (1) in the object plane (36) as the control circuitry captures images of different field of view (i.e., see Figs. 4-5 and 9-14 of Ariga '068 for capturing the images of different filed of view as claimed).

Regarding claim 9, the combination of Ariga '068 and Shinoda '506 discloses in which the actuator (Fig. 1 of Ariga '068; the elements 5, 6, 11, 12, 14 and 15) scans the field of view of the objective lens (1) continuously as the control circuitry captures images of different fields of view (i.e., see Figs. 4-5 and 9-14 of Ariga '068 for capturing the images of different filed of view as claimed).

Regarding claim 11, Ariga '068 discloses a document scanning system (Fig. 1) comprising: a camera (2), the camera comprising an electronic detector array (Fig. 2, the element 203) for image capture, an objective lens (1) with a field of view to image optical radiation from an object plane (36) onto the electronic detector array (i.e., the CCD sensor 203 of the camera as shown in Fig. 3), and a shutter comprising electronic control circuitry to synchronize the capture of an image by the detector array (i.e., noted that the shutter switch 44 as shown in Fig. 3 is used to synchronize the images captured by the CCD sensor 203 of the camera 2), and

the camera further including an actuator (Fig. 1 of Ariga '068; the elements 5, 6, 11, 12, 14 and 15) to scan the field of view of the objective lens (1) in the object plane (36/35) as the control circuitry captures images of different field of view (i.e., see Figs. 4-5 and 9-14 of Ariga '068 for capturing the images of different filed of view as claimed);

the document scanning system (Fig. 1) further comprising, a mount (i.e., see Figs. 16-19; col. 12, lines 20+) by which the camera (2) may be positioned to image onto the electronic detector array (i.e., the CCD sensor 203 of the camera as shown in Fig. 3) a portion of a document (35) in the object plane (36), wherein the actuator is operable to scan the field of view of the objective lens as the control circuitry captures images of different portions of the document (i.e., noted the different portion of the document is captured by the camera 2 as shown in Figs. 4-5 and 9-14).

Further, it is noted that Ariga '068 does not explicitly show the use of a strobe flash for illuminating the object plane, electronic plane circuitry to pulse the strobe flash at a rate which is sufficiently quick that the illumination appears to a user of the camera to be substantially steady owing to persistence of vision, and synchronizing the capture of an image by the detector array with the strobe flash, each image being captured with at least one pulse from the strobe flash, wherein the shutter is adapted to capture images at a rate substantially below the rate at which the strobe flash is pulsed.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Shinoda '506. In particular, Shinoda '506 teaches the use of a strobe flash (11) with the camera (12) for illuminating the object plane (5), electronic plane circuitry, such as the shutter and other control circuitry of the unit 1 as shown in Fig. 2 (i.e., noted that the camera 12 and the electronic control circuitry 1 as shown in Fig. 3 must include the shutter to captured the images), to pulse the strobe flash at a rate which is sufficiently quick that the illumination appears to a user of the camera to be substantially steady owing to persistence of vision (Fig. 3, col. 1, lines 55+ and col. 2, lines 60+), and the shutter (i.e., noted that the shutter must be

included in the system of Shinoda '506 for capturing the images by the camera 12) is synchronizing the capture of an image by the detector array with the strobe flash, each image being captured with at least one pulse from the strobe flash (i.e., noted the strobe pulse as shown in Fig. 3), wherein the shutter is adapted to capture images at a rate substantially below the rate at which the strobe flash is pulse (i.e., noted that the rate of strobe pulse is 30 micro-sec, thus, the rate of the shutter speed of the camera is substantially below the rate of the strobe pulse; see col. 1, lines 55+, col. 2, lines 65+ and col. 3, lines 15+).

In view of the above, having the system of Ariga '068 and then given the well-established teaching of Shinoda '506, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Ariga '068 as taught by Shinoda '506, since Shinoda '506 suggest in col. 1, lines 50+ and col. 4, lines 10+ that such a modification would improve the quality of image by providing the stationary image of the fast moving object so that monitoring may be accomplished easily.

Regarding claim13, Ariga '068 discloses a method of imaging a document (35) using a camera (2) comprising an electronic detector array for image capture (i.e., noted the CCD sensor 203 of the camera 2 as shown in Fig. 3), an objective lens (1) with a field of view to image optical radiation from an object plane (36/35) onto the electronic detector array (203), and a shutter comprising electronic control circuitry to synchronize the capture of an image by the detector array (i.e., noted that the shutter switch 44 as shown in Fig. 3 is used to synchronize the images captured by the CCD sensor 203 of the camera 2),

the camera further including an actuator (Fig. 1 of Ariga '068; the elements 5, 6, 11, 12, 14 and 15) to scan the field of view of the objective lens (1) in the object plane (36/35) as the

control circuitry (i.e., Fig. 3) captures images of different field of view (i.e., noted the different portion of the document is captured by the camera 2 as shown in Figs. 4-5 and 9-14); wherein the method comprises the steps of:

a) aiming the camera at a document in the object plane so that a portion of the document falls within the field of view (i.e., noted from Figs. 4, 9, 10, 12-14 that the camera 2 is aiming at a document 35 in the object plane 36 so that a portion of the document 35 falls within the field of view of the camera 2); and

b) using the actuator to scan the field of view of the object lens (1) as the control circuitry (i.e., noted that Fig. 3 shows the control circuitry) captures images of different portions of the document (i.e., noted that different portions of the document 35 may be captured by the camera 2 as shown in Figs. 4-5 and 9-14).

Furthermore, it is noted that Ariga '068 does not explicitly show the use of a strobe flash for illuminating the object plane, electronic pulse circuitry to pulse the strobe flash at a rate which is sufficiently quick that the illumination appears to a user of the camera to be substantially steady owing to persistence of vision, electronic control circuitry to synchronize the capture of an image by the detector array with the strobe flash, each image being captured with at least one pulse from the strobe flash, wherein the shutter is adapted to capture images at a rate substantially below the rate at which the strobe flash is pulsed.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Shinoda '506. In particular, Shinoda '506 teaches the use of a strobe flash (11) with the camera (12) for illuminating the object plane (5), electronic plane circuitry, such as the shutter and other control circuitry of the unit 1 as shown in Fig. 2 (i.e., noted that the camera 12

and the electronic control circuitry 1 as shown in Fig. 3 must include the shutter to captured the images), to pulse the strobe flash at a rate which is sufficiently quick that the illumination appears to a user of the camera to be substantially steady owing to persistence of vision (Fig. 3, col. 1, lines 55+ and col. 2, lines 60+), and the shutter (i.e., noted that the shutter must be included in the system of Shinoda '506 for capturing the images by the camera 12) is synchronizing the capture of an image by the detector array with the strobe flash, each image being captured with at least one pulse from the strobe flash (i.e., noted the strobe pulse as shown in Fig. 3), wherein the shutter is adapted to capture images at a rate substantially below the rate at which the strobe flash is pulse (i.e., noted that the rate of strobe pulse is 30 micro-sec, thus, the rate of the shutter speed of the camera is substantially below the rate of the strobe pulse; see col. 1, lines 55+, col. 2, lines 65+ and col. 3, lines 15+).

In view of the above, having the system of Ariga '068 and then given the well-established teaching of Shinoda '506, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Ariga '068 as taught by Shinoda '506, since Shinoda '506 suggest in col. 1, lines 50+ and col. 4, lines 10+ that such a modification would improve the quality of image by providing the stationary image of the fast moving object so that monitoring may be accomplished easily.

Regarding claim 14, Ariga '068 discloses a method of scanning a document (35) using a document scanning system (Fig. 1), the document scanning system (Fig. 1) comprising a camera (2), the camera comprising an electronic detector array (203) for image capture, an objective lens (1) with a field of view to image optical radiation from an object plane (36) onto the electronic

detector array (203), and a shutter (Fig. 3, the element 44) comprising electronic control circuitry to synchronize the capture of an image by the detector array (203),

the camera further including an actuator (Fig. 1 of Ariga '068; the elements 5, 6, 11, 12, 14 and 15) to scan the field of view of the objective lens (1) in the object plane (36/35) as the control circuitry (i.e., Fig. 3) captures images of different field of view (i.e., noted the different portion of the document is captured by the camera 2 as shown in Figs. 4-5 and 9-14);

the document scanning system (Fig. 1) further comprising a mount (i.e., see Figs. 16-23; col. 12, lines 20+) by which the camera (2) may be positioned to image onto the electronic detector array (203) a portion of a document (35) in the object plane (36), wherein the actuator (Fig. 1 of Ariga '068; the elements 5, 6, 11, 12, 14 and 15) is operable to scan the field of view of the objective lens as the control circuitry (i.e., noted that Fig. 3 show the control circuitry) captures images of different portions of the document (i.e., noted the different portion of the document is captured by the camera 2 as shown in Figs. 4-5 and 9-14), wherein the method comprises the steps of:

a) mounting the camera to image onto the detector the portion of the document in the object plane (i.e., as shown in Figs. 16-17, the camera portion 2 is mounted to captured the portion of the image of the document 35); and

b) using the actuator to scan the field of view of the objective lens (1) as the control circuitry (Fig. 3) captures images of different portions of the document (i.e., noted that different portions of the document 35 may be captured by the camera 2 as shown in Figs. 4-5 and 9-14).

Furthermore, it is noted that Ariga '068 does not explicitly show the use of a strobe flash for illuminating the object plane, electronic pulse circuitry to pulse the strobe flash at a rate

which is sufficiently quick that the illumination appears to a user of the camera to be substantially steady owing to persistence of vision, electronic control circuitry to synchronize the capture of an image by the detector array with the strobe flash, each image being captured with at least one pulse from the strobe flash, wherein the shutter is adapted to capture images at a rate substantially below the rate at which the strobe flash is pulsed.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Shinoda '506. In particular, Shinoda '506 teaches the use of a strobe flash (11) with the camera (12) for illuminating the object plane (5), electronic plane circuitry, such as the shutter and other control circuitry of the unit 1 as shown in Fig. 2 (i.e., noted that the camera 12 and the electronic control circuitry 1 as shown in Fig. 3 must include the shutter to captured the images), to pulse the strobe flash at a rate which is sufficiently quick that the illumination appears to a user of the camera to be substantially steady owing to persistence of vision (Fig. 3, col. 1, lines 55+ and col. 2, lines 60+), and the shutter (i.e., noted that the shutter must be included in the system of Shinoda '506 for capturing the images by the camera 12) is synchronizing the capture of an image by the detector array with the strobe flash, each image being captured with at least one pulse from the strobe flash (i.e., noted the strobe pulse as shown in Fig. 3), wherein the shutter is adapted to capture images at a rate substantially below the rate at which the strobe flash is pulse (i.e., noted that the rate of strobe pulse is 30 micro-sec, thus, the rate of the shutter speed of the camera is substantially below the rate of the strobe pulse; see col. 1, lines 55+, col. 2, lines 65+ and col. 3, lines 15+).

In view of the above, having the system of Ariga '068 and then given the well-established teaching of Shinoda '506, it would have been obvious to one having ordinary skill in the art at

the time the invention was made to modify the system of Ariga '068 as taught by Shinoda '506, since Shinoda '506 suggest in col. 1, lines 50+ and col. 4, lines 10+ that such a modification would improve the quality of image by providing the stationary image of the fast moving object so that monitoring may be accomplished easily.

9. Claims 12 and 15 rejected under 35 U.S.C. 103(a) as being unpatentable over Ariga '068 in view of Shinoda '506 as applied to claims discussed above, and further in view of Katayama et al. (U.S. 2002/0126890).

Regarding claim12, the combination of Ariga '068 and Shinoda '506 does not explicitly show in which the system comprises a processor adapted to execute a stitching algorithm by which images captured form adjacent or overlapping field of view can be joined into a composite image of the adjacent or overlapping fields.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Katayama '890. In particular, Katayama '890 teaches the use of a processor (i.e., Figs. 1, 10 and 11) adapted to execute a stitching algorithm by which images captured form adjacent or overlapping field of view can be joined into a composite image of the adjacent or overlapping fields (i.e., see page 1, paragraph 0001, page 6, paragraphs 0111+, and page 8, paragraphs 0138+).

In view of the above, having the system of Ariga '068 and then given the well-established teaching of Katayama '890, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Ariga '068 as taught by Katayama '890, since Katayama '890 suggest in page 2, paragraph 0019+ that such a modification would

provide an image combining apparatus which can always easily obtain a high-quality panoramic image thereof.

Regarding claim 15, please see the Examiner's comment with respect to claim 12 as discussed above.

Allowable Subject Matter

10. Claim 3 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Fukui '350, Kondo '364 and Miyazaki '049 and Burgarella shown the rate of flash pulse and the shutter rate of the camera.

b. Umeda '342 and Lindberg '225 shown a document scanning system having a camera and an actuator to scan the field of view of the object lens of the camera in the object plane as the control circuitry captures images of different field of views.

c. Tokuji '529 (JP Abstract) show a rate of shutter is lower than the rate at which the strobe flash is pulsed

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aung S. Moe whose telephone number is 703-306-3021. The examiner can normally be reached on Mon-Fri (9-5).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on 703-305-4929. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Aung S. Moe
Primary Examiner
Art Unit 2612

A. Moe
March 10, 2004